Notice of Allowability	Application No.	Applicant(s)	
	09/921,397	LEGRAIN ET AL.	
	Examiner	Art Unit	
	Mary E. Mosher, Ph.D.	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *1/27/05, 2/18/05*.

2. ☒ The allowed claim(s) is/are *1-5,12-16,20,21,24,27-30,44,45,47-50,62 and 74-85*.

3. ☒ The drawings filed on *02 August 2001* are accepted by the Examiner.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with George Ng on 5/18/2005.

The application has been amended as follows:

A complete listing of all the claims is attached, showing the changes to the claims.

The following is an examiner's statement of reasons for allowance:

Reasons for amendments to the claims

Claims 1-4, 47 have been amended to correct grammatical or typographical errors.

Claim 20 has been amended to change "A cell host" to "An isolated host cell", to correct the grammar and for consistency with the previous amendment of claims 47-50 to recite "isolated" cells.

Claim 26 has been cancelled without prejudice as belonging to the group I polypeptide invention.

Claims 27-30 have been amended at applicant's request to more clearly define the invention.

Claim 44 has been amended, and new claims 76-86 have been added, to better describe embodiments of the invention. For claim 44, the specification does not use the literal recitation of "a two-component marker compound", but support for this concept is clearly found on specification page 45. Similarly, claims 76-85 are supported by specification page 45.

Multiple dependent claim 6 has been cancelled in favor of two independent claims, claims 74 and 75.

Prior to allowing this application, the examiner initiated telephonic discussion on the scope and content of claims 2, 4, and 6. Claims 2 and 4 originally depended from claim 1. Original claims 1, 2 and 4 were rejected as indefinite, because 2 & 4 required variation from the structure of SEQ ID NO:20 while original parent claim 1 recited "a polypeptide consisting essentially of [SEQ ID NO:20]," which language conventionally requires SEQ ID NO:20 to be intact. Applicant, in response, amended claims 2 and 4 "to become independent claims, solely to expedite the prosecution of the present application." The examiner was belatedly concerned that claims 2 and 4, as independent claims, now could be read as encompassing a nucleic acid encoding the full-size HCV NS5B polypeptide. Applicant's representatives argued that the claim 2 recitation "encodes a polypeptide having at least 95% amino acid identity with a polypeptide having the the amino acid sequence of SEQ ID NO:20" excluded the full size NS5B polypeptide, because (1) the term "encoding" was not open to including more coding sequence than recited in the claim, and (2) the full-size NS5B polypeptide has less than 95% identity with SEQ ID NO:20, being much longer than SEQ ID NO:20.

Similarly, argument (2) applied to the scope and content of claim 4. Upon reflection, the examiner adopted the position set forth in these arguments. Since claim 6 was also belatedly recognized as requiring variation on the structure of SEQ ID NO:20, claim 6 was rewritten as two independent claims. For claims 74 and 75, the specification defines "equivalent amino acids" as meaning amino acids which do not decrease the binding properties of the polypeptide.

Claims 21, 44, 62, 76, and 77 include the trademark "SID®". These claims have not been rejected as indefinite, because the body of each claim fully defines the composition of these claims in terms of the nucleic acids of claims 1-5 and in terms of the additional components required. The specification defines "SID®" in the section from page 6 line 26 to page 7 line 12; the examiner notes that the trademark refers to composition of matter defined by the process by which it was selected and characterized. If applicant wishes to fully define a product according to its structure and characteristics, and add more limitations by requiring that the fully-defined product be obtained according to a particular process, that is applicant's prerogative.

Reasons for allowance

Sequence 20 is a small fragment of an HCV protein NS5B polymerase protein. The prior art does not teach or suggest a fragment with similar endpoints, or teach or suggest that this fragment binds to other HCV proteins, or suggest this fragment for use in an assay for screening for binding inhibitors as potential new anti-HCV therapeutics, or its association with a marker protein (directly covalently or via binding to a marked

"prey" polypeptide). Similarly, the prior art does not teach or suggest nucleic acids encoding the same.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary E. Mosher, Ph.D. whose telephone number is 571-272-0906. The examiner can normally be reached on M-T and alternate F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel can be reached on 571-272-0902. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

5/29/05

MARY E. MOSHER, PH.D.
PRIMARY EXAMINER

IN THE CLAIMS

1. (Currently amended) A nucleic acid which encodes a polypeptide~~,~~ consisting essentially of the amino acid ~~sequences~~ sequence of SEQ ID NO: 20.

2. (Currently amended) A nucleic acid sequence, which encodes a polypeptide having at least 95% amino acid identity with a polypeptide having the amino acid sequence of SEQ ID N0:20 and retains the same binding affinity ~~to~~ as said polypeptide of SEQ ID N0:20.

3. (Currently amended) A nucleic acid ~~of~~ according to claim 1, wherein said nucleic acid consists essentially of SEQ ID NO:58 or a sequence complementary thereto.

4. (Currently amended) A nucleic acid, ~~wherein said nucleic acid has~~ having at least 95% nucleic acid identity with a the nucleic acid of SEQ ID N0:58 or a sequence complementary thereto, and which encodes a polypeptide retaining the same binding affinity ~~to said~~ as the polypeptide of SEQ ID ~~No. 20~~ NO:20.

5. (Previously presented) A nucleic acid, encoding a polypeptide having an amino acid sequence consisting essentially of 40 consecutive amino acids of SEQ ID N0:20.

6-11. (Cancelled)

12. (previously presented) A recombinant vector comprising a nucleic acid according to claim 1.

13. (previously presented) A recombinant vector comprising a nucleic acid according to claim 2.

14. (previously presented) A recombinant vector comprising a nucleic acid according to claim 3.

15. (previously presented) A recombinant vector comprising a nucleic acid according to claim 4.

16. (previously presented) A recombinant vector comprising a nucleic acid according to claim 5.

17-19. (cancelled)

20. (Currently amended) ~~A cell host~~ An isolated host cell transformed with a vector according to any one of claims 12 to 16.

21. (previously presented) A set of two nucleic acids consisting essentially of:

(i) a first nucleic acid encoding a Selected Interacting Domain (SID®) polypeptide according to claim 1; and

(ii) a second nucleic acid encoding a prey polypeptide which binds to the SID® polypeptide defined in i).

22-23. (cancelled)

24. (previously presented) A composition comprising a set of two nucleic acids, encoding polypeptides, consisting essentially of the set SEQ ID N0:132/SEQ ID N0:58.

25-26. (cancelled)

27. (Currently amended) A method for selecting a molecule which inhibits the binding between a set of two polypeptides wherein said method comprises:

a) cultivating a recombinant host cell containing a reporter gene the expression of which is toxic for said recombinant host cell, said recombinant host cell ~~being transformed with~~ further comprising two vectors wherein:

i) the first vector contains a nucleic acid comprising a polynucleotide encoding a first hybrid polypeptide containing a first polypeptide encoded by a nucleic acid according to any one of claims 1 to 5, and a DNA binding domain;

ii) the second vector contains a nucleic acid comprising a polynucleotide encoding a second hybrid polypeptide containing a second polypeptide which binds with the first polypeptide, and an activating domain ~~capable of activating~~ which activates said toxic reporter gene when the first and the second hybrid polypeptides are interacting;

wherein said cultivating is on a selective medium containing the molecule to be tested and ~~allowing~~ that allows the growth of said recombinant host cell when the toxic reporter gene is not activated; and

b) selecting the molecule ~~which~~ if it inhibits the growth of the recombinant host cell defined in ~~step~~ a).

28. (Currently amended) A method for selecting a molecule which inhibits the binding between a set of two polypeptides wherein said method comprises:

a) cultivating a recombinant host cell containing a reporter gene the expression of which is toxic for said recombinant host cell, said recombinant host cell ~~being transformed with~~ further comprising two vectors wherein:

i) the first vector contains a nucleic acid comprising a polynucleotide encoding a first hybrid polypeptide containing a first polypeptide encoded by SEQ ID NO: 132, and a DNA binding domain;

ii) the second vector contains a nucleic acid comprising a polynucleotide encoding a second hybrid polypeptide containing a second polypeptide encoded by SEQ ID NO: 58 and an activating domain ~~capable of activating~~ which activates said toxic reporter gene when the first and the second hybrid polypeptides are interacting;

wherein said cultivating is on a selective medium containing the molecule to be tested and ~~allowing~~ that allows the growth of said recombinant host cell when the toxic reporter gene is not activated; and

b) selecting the molecule ~~which~~ if it inhibits the growth of the recombinant host cell defined in ~~step~~ a).

29. (Currently amended) A method for selecting a molecule which inhibits protein-protein interaction of a set of two polypeptides wherein said method comprises ~~the step of~~:

a) cultivating a recombinant host cell containing a reporter gene the expression of which is toxic for said recombinant host cell, said recombinant host cell ~~being transformed with~~ further comprising two vectors wherein:

i) the first vector contains a nucleic acid comprising a polynucleotide encoding a first hybrid polypeptide containing a first polypeptide encoded

by a nucleic acid according to any one of claims 1 to 5, and ~~the~~ a first domain of an enzyme;

ii) the second vector contains a nucleic acid comprising a polynucleotide encoding a second hybrid polypeptide containing a second, polypeptide which binds with the first polypeptide and ~~the~~ a second part of said enzyme ~~capable of activating~~ which activates said toxic reporter gene when the first and the second hybrid polypeptides are interacting, said interaction recovering the catalytic activity of the enzyme;

wherein said cultivating is on a selective medium containing the molecule to be tested and ~~allowing~~ that allows the growth of said recombinant host cell when the toxic reporter gene is not activated; and

b) selecting the molecule ~~which~~ if it inhibits the growth of the recombinant host cell defined in ~~step~~ a).

30. (Currently amended) A method for selecting a molecule which inhibits protein-protein interaction of a set of two polypeptides wherein said method comprises ~~the step of~~:

a) cultivating a recombinant host cell containing a reporter gene the expression of which is toxic for said recombinant host cell, said recombinant host cell ~~being transformed with~~ further comprising two vectors wherein:

i) the first vector contains a nucleic acid comprising a polynucleotide encoding a first hybrid polypeptide containing a first polypeptide encoded by SEQ ID NO: 132, and ~~the~~ a first domain of an enzyme;

ii) the second vector contains a nucleic acid comprising a polynucleotide encoding a second hybrid polypeptide containing a second polypeptide encoded by SEQ ID N0:58, and ~~the~~ a second part of said enzyme ~~capable of activating~~ which activates said toxic reporter gene when the first and the second hybrid polypeptides are interacting, said interaction recovering the catalytic activity of the enzyme;

wherein said cultivating is on a selective medium containing the molecule to be tested and ~~allowing~~ that allows the growth of said recombinant host cell when the toxic gene is not activated; and

b) selecting the molecule ~~which~~ if it inhibits the growth of the recombinant host cell defined in ~~step~~ a).

31-43. (cancelled)

44. (currently amended) A nucleic acid encoding a two-component marker compound, wherein the first component comprises ~~comprising~~ a Selected Interacting Domain (SID®) polypeptide encoded by a nucleic acid according to any one of claims 1 to 5; and the second component comprises a detectable ~~molecule bound thereto~~ polypeptide which can non-covalently bind to said SID® polypeptide.

45. (previously presented) A recombinant vector comprising a nucleic acid according to claim 44.

46. (cancelled)

47. (currently amended) An isolated recombinant host cell which has been ~~transected~~ transformed with said recombinant vector according to claim 45.

48. (Previously presented) An isolated recombinant host cell according to claim 47 which is of prokaryotic origin.

49. (Previously presented) An isolated recombinant host cell according to claim 47 which is of eukaryotic origin.

50. (Previously presented) An isolated recombinant host cell according to claim 49 which is a mammalian host cell.

51-61. (cancelled)

62. (previously presented) A composition comprising a polynucleotide encoding a Selected Interacting Domain (SID®) polypeptide according to any one of claims 1 to 5, and a carrier.

63-73. (cancelled)

74. (New) A nucleic acid which encodes a polypeptide variant of SEQ ID NO: 20 having from one to three equivalent amino acid substitutions.

75. (New) A nucleic acid which encodes a polypeptide consisting essentially of 40 consecutive amino acids of a variant of SEQ ID NO: 20, said variant having from one to three equivalent amino acid substitutions.

76. (New) A nucleic acid encoding a marker compound, wherein said marker compound comprises a detectable polypeptide covalently bound to a Selected Interacting Domain (SID®) polypeptide encoded by a nucleic acid according co any one of claims 1 to 5.

77. (New) The nucleic acid of claim 76, wherein the detectable polypeptide is fused to the SID@ polypeptide.

78. (New) The nucleic acid of claim 77, wherein said detectable polypeptide is a fluorescent protein.

79. (New) The nucleic acid of claim 78, wherein said fluorescent protein is green fluorescent protein (GFP).

80. (New) The nucleic acid of claim 78, wherein said fluorescent protein is yellow fluorescent protein (YFP).

81. (New) The nucleic acid of claim 77, wherein said detectable polypeptide has catalytic activity.

82. (New) The nucleic acid of claim 81, wherein said detectable polypeptide is an enzyme or enzymatically active enzyme fragment.

83. (New) The nucleic acid of claim 82, wherein said enzyme is alkaline phosphatase.

84. (New) The nucleic acid of claim 82, wherein said enzyme is glutathione peroxydase.

85. (New) The nucleic acid of claim 82, wherein said enzyme is horse radish peroxydase.